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i2 SUMMIT

MECHANICAL COMPRESSION DEVICES ARE BETTER THAN MANUAL COMPRESSION FOLLOWING PERCUTANEOUS CORONARY INTERVENTION

i2 Poster Contributions
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Background: Mechanical compression devices may shorten time to ambulation and decrease vascular complications.

Methods: We retrospectively assessed length of hospital stay, all-cause mortality, and local vascular complications in 12,276 consecutive patients who underwent percutaneous coronary intervention (PCI) using femoral approach from March 2005 to June 2009.

Results: More patients had mechanical compression devices (10,030, 82%) than manual compression (2,246, 18%). Rate of any vascular complication was lower with mechanical compression devices (1.6% vs. 3.1%, p<0.001). Length of hospital stay was shorter with mechanical compression devices (2.1 days vs. 3.1 days, p<0.001). After adjustment for baseline differences, multivariate logistic regression analysis showed lower rates of vascular complications and 1-year all-cause mortality with mechanical compression devices.

Conclusions: In patients undergoing PCI, mechanical compression devices may reduce length of hospital stay and lower the risk of local vascular complications and 1-year all-cause mortality when compared to manual compression.

Manual Compression Versus Mechanical Compression Devices Following PCI

		Type of Closure		
Characteristic	Overall	Manual	Mechanical	P-value
No of Patients	12,276	2246 (18.3%)	10,030 (81.7%)	
Baseline Characteristics				
Age - mean ± SD years	66.1±12.28	66.4±12.36	66.1±12.26	0.333
Age ≥70 years - no. (%)	5,175 (42.2%)	950 (42.3%)	4,225 (42.1%)	0.880
Women - no. (%)	4,563 (37.2%)	1,045 (46.5%)	3,518 (35.1%)	<0.001
Renal failure - no. (%)	550 (4.5%)	143 (6.4%)	407 (4.1%)	<0.001
PVD - no. (%)	1,642 (13.4%)	425 (18.9%)	1,217 (12.1%)	<0.001
BMI - mean ± SD kg/m2	30.0±6.53	31.5±8.03	29.6±6.09	<0.001
GP IIbIIIa - no. (%)	3,214 (26.2%)	610 (27.2%)	2,604 (26.0%)	0.243
Endpoint				
Length of hospital stay - mean ± SD days	2.3 ± 3.78	3.1 ± 4.29	2.1 ± 3.63	<0.001
Any vascular complication - no (%)	234 (1.9%)	70 (3.1%)	164 (1.6%)	<0.001
All-cause one-year mortality - no. (%)	546 (4.5%)	138 (6.1%)	408 (4.1%)	<0.001
Endpoint	Adjusted Odds Ratio (95%CI) for Manual vs. Mechanical			
Any vascular complication	1.49 (1.11-1.99)			0.009
All-cause one-year mortality	1.30 (1.05-1.60)			0.016

Notes: Differences in patients' demographic and clinical characteristics were compared across the two closure groups with Wilcoxon rank sum test for continuous variables and chi-square test for categorical variables.
Abbreviations: BMI=body mass index; PCI=percutaneous coronary intervention; PVD=peripheral vascular disease.